CONDENSED TRANSCRIPT

IN THE COURT OF UNITED STATES DISTRICT COURT FOR THE DISTRICT OF NEW JERSEY

SOUTH CAMDEN CITIZENS IN ACTION, GENEVA SANDERS, PAULINE WOODS, BARBARA PFEIFFER, JULITA GILLIARD, OSCAR LISBOA, PHYLLIS HOLMES, GWEN PETERSON, LATOYA COOPER, JULIO LUGO, LULA WILLIAMS and SHARON CHRISTIE POTTER, Plaintiffs

V. C.A. NO. 01-cv-702 (FLW)

THE NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, BRADLEY CAMPBELL, Commissioner of The NJ Dept. of Environmental Protection, In his official capacity, Defendant,

V .

215.564.3905

PHONE

ST. LAWRENCE CEMENT CO., L.L.C., Intervenor

Oral deposition of STUART

A. BATTERMAN, Ph.D., held in the law offices of Kirkpatrick & Lockhart

Nicholson Graham LLP, One Newark

Center, Tenth Floor, Newark, New

Jersey, on Monday, April 11, 2005,

commencing at 10:07 a.m., before

Kathleen McHugh, a Registered

Professional Reporter and Notary

Public.



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|----|--|-----|--|-----|
| | 214 | | 216 | |
| 1 | A. Amounts of sulfates, I | | l information — | |
| 2 | would imagine, would be pretty | | | |
| 3 | small. Nitrates as well. There may | 1 3 | the state of the s | |
| 4 | be some traces of elemental carbon, | 1 4 | | |
| 5 | but probably quite low as well. | 1 3 | or are mullimanic | |
| 6 | Q. You've heard of the term | - 1 | The second disc be forth, rescribing | |
| 7 | "crustal material"? | 6 | and middle i de, too. | |
| 8 | A. Yes. | 7 | | |
| 9 | Q. Would you agree that | 8 | Introll t Booth ally | |
| 10 | St. Lawrence's material is a crustal | 9 | 21011141011. | |
| 11 | material? | 10 | C Components are | |
| 12 | A. A component of the slag | 11 | you referring to? | |
| 13 | would be of crustal ending. The state | 12 | | |
| 14 | would be of crustal origin. To that | 13 | T TOOK At CHAPET | |
| 15 | extent, I agree. | 14 | material, we find in crustal | |
| 16 | Q. To what extent might you | 15 | materials a certain amount of lead, | |
| 17 | not agree? | 16 | mercury, cadmium, rare earths, trace | |
| 18 | A. Crustal material usually | 17 | elements, those can vary | |
| | refers to material in the near – in | 18 | tremendously. We also find a certain | |
| 19 | the surficial layers of the earth's | 19 | amount of carbon material | |
| 20 | crust, which is primarily aluminum | 20 | | |
| 21 | oxides, silicon oxides, clays and | 21 | fraction of the total bulk, but | |
| 22 | soils and things like this. It | 22 | differences in those kinds of | |
| 23 | doesn't necessarily refer to material | 23 | materials in the relative amounts do | |
| 24 | that's been through a blast furnace. | 24 | vary. I haven't seen an analysis of | |
| | | - | | |
| 1 | 215 | | 217 | |
| 1 | Q. Would you know whether the | 1 | the trace elements or the trace | |
| 2 | slag material at SLC contains high | 2 | organics in the emissions from | |
| 3 | proportions of elements such as | 3 | St. Lawrence. | |
| 4 | aluminum, calcium, silicon similar to | 4 | Q. Would you expect that the | |
| 5 | soil and rock that you mentioned? | 5 | emissions at St. Lawrence would be | |
| 6 | A. I've seen one — I believe | 6 | significantly different from the | |
| 7 | it was in a pie chart - expressing | 7 | material itself? | |
| 8 | the composition of a couple of those | 8 | A. Could be | |
| 9 | elements and there were high | 9 | Q. Why do you think it could | |
| 10 | concentrations of aluminum and | | be? | |
| 11 | silicon in that material. | 11 | A. I don't know that it is, | |
| 12 | Q. Based on what you've | 12 | but it could be We find the C | |
| 13 | reviewed, do you have any reason to | 13 | but it could be. We find that, for | ĺ |
| 14 | think the slag material is not a | 14 | example, the material that may break | |
| 15 | crustal material? | | into very small pieces could be | |
| 16 | A. I don't know the | 15 | structurally and chemically different | |
| | composition of other materials or I | 16 | from the bulk composition. | - |
| | don't know the composition of these | 17 | Q. Would you get a widely | |
| | trace materials which could vary from | 18 | differing - have you found you could | ļ |
| | the types of aerosols that are | 19 | get a widely differing result? | ĺ |
| | and of two or acrosors first sign | 20 | A Drobabler med Tal- | - 1 |

20

22

21 possible.

A. Probably not. It's

Q. Is it true that all the

23 studies you reviewed and that you

24 reference in your report are based on

24 if it's there or you have some

21 considered to be of crustal origin.

Q. I'm not sure I understand

23 you. Are you saying you don't know

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| Ι. | | l | 216 | |
| | A. Amounts of sulfates, I | 1 | information — | |
| 1 | o pict | 2 | A. No. I would say that the | |
| 3 | - TROIC HELY | 3 | bulk of the material, in terms of | |
| 4 | TO DOLLA STATE OF OF OTCHIOTING CONDOLL | 4 | | |
| 5 | Process dente 104 42 MCH. | 5 | | |
| 1 6 | C our to vibrate of the felling | 6 | crustal material, that much I agree. | |
| 7 | "crustal material"? | 1 7 | The other components I don't know | |
| 8 | A. Yes. | 8 | because I haven't seen any | |
| 9 | Q. Would you agree that | 9 | information. | |
| 10 | St. Lawrence's material is a crustal | 10 | | |
| 1] | material? | 11 | C Components the | |
| 12 | A. A component of the slag | 12 | y | |
| 13 | would be of crustal origin. To that | 1 | | |
| 14 | extent, I agree. | 13 | | |
| 15 | | 14 | | |
| 16 | not agree? | 15 | and a second distriction of lotter, | |
| 17 | | 16 | | |
| 18 | | 17 | | |
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| 20 | crust subject is subject to the earth's | 19 | The state of the s | Ī |
| 21 | y zo pranami y enemani. | 20 | mostep & (CI) Dilami | ļ |
| 22 | | 21 | fraction of the total bulk, but | ı |
| | | 22 | The same of the sa | |
| 23 | | 23 | materials in the relative amounts do | |
| 24 | that's been through a blast furnace. | 24 | vary. I haven't seen an analysis of | - [|
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| 1 | | | | - 1 |
| - | | | | |
| | 215 | | | _ |
| | O Would you know what had | | 217 | _ |
| 1 2 | Q. Would you know whether the | 1 | the trace elements or the trace | _ |
| 2 | Q. Would you know whether the slag material at SLC contains high | 2 | the trace elements or the trace organics in the emissions from | |
| 2 3 | Q. Would you know whether the slag material at SLC contains high proportions of elements such as | | | |
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noncrustal particulates?

A. No.

2

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4

6

Q. What do you believe is studies are related to crustal --

A. Oh, I think almost all of these studies aren't, in fact,

apportioning the particulate matter

8 to one source or another. So crustal

material is a component of the PM

10 that's in most of these health

11 studies that I've cited.

12 Q. Do any health studies 13 you're aware of specifically discuss

14 the impact of crustal material? 15

A. That EPA uses? Perhaps 16 there's some. I don't recall. Most

17 of them are looking at urban

18 aerosols. And that includes crustal

19 material, that includes carbon, it

20 includes sulfate, it includes the

21 other things you talked about. 22 Q. When you're saying it

23 includes crustal material, crustal

24 material, if you did it on a pie

220

1 see - on a PM10 basis, what would

2 you think the crustal --3

A. It varies tremendously.

4 For example, the contributions in

5 arid areas where there's a lot of

6 entrained soils, for example, or in

7 eastern areas that are dry and dusty

8 during the summertime. 9

Q. What I'm asking you

10 about - I'm being somewhat

11 specific. I'm talking about most of

12 the studies are conducted in urban

13 areas; is that true?

14 A. Um-hum.

15 Q. And that's where most of 16

the data is coming out of; is that

17

18 A. We're talking about several

19 types of studies here. Most of the

health effect studies, which I think

21 is what you're after, are conducted

22 in urban areas. Certainly studies

23 looking at components of aerosol are

conducted everywhere.

219

chart, would be a very minor amount

of it, is that fair to say?

A. It depends. For PM10, the amount of crustal material can be

5 more than a very narrow sliver. For

6 PM2.5, the sliver decreases

7 typically. Most of the PM2,5, not

all of it, is from combustion sources

and is chemically different from

10 the -- much of the material that

11 contributes to the PM10. So, in

12 other words, the PM10 has a higher

13 crustal component.

14 Q. And could you express that

15 on a percentage basis?

16 A. Sure. Varies.

17 Q. What do you think the range

18 is?

19 A. For Camden, the PM10

20 contribution from crustal sources, I

don't have a specific number in mind. 21

22 Q. What about the EPA and

23 other studies that were conducted in

urban areas; what would you expect to

221

Q. Would you expect that the

large majority of emissions looking 3 at particulates are from combustion

4 sources?

A. For PM2.5, that's likely to

6 be true.

5

7

8

10

12

17

24

O. How about for PM10?

A. It's a mix for PM10.

9 Q. Would you say that it's -

the large majority is from combustion

11 sources?

MR. COLE: I'm going to

13 allow this to go on for a little bit

longer, but it seems like you've 14

asked the same question seven 15

16 different ways here, Brian.

MR. MONTAG: I hear you

18 but I'd like an answer to this one.

19 BY MR. MONTAG:

20 Q. Specifically for PM10, is

it fair to say the large majority in 21

the urban area studies would be from

23 combustion sources?

A. I don't know what "large